As per **claim 10**:

A system in communication with storage, comprising:

circuitry enabled to:

receive an I/O request to write an update to an object in the storage;

determining whether an amount of fragmentation of the object in the storage exceeds a fragmentation threshold indicating an acceptable number of bytes stored in non-contiguous locations in response to receiving the I/O request;

determining at least one logical partition including the object;

determining whether the object is read-only;

if the object is not read-only and if the object is within one logical partition, defragment the object in storage so that blocks in storage including the object are contiguous in response to receiving the I/O request to write the update to the object, wherein the request to write the update to the object causes the defragmentation operation; and

execute the I/O request to write the update to the object in storage without defragmenting the object in response to determining at least one of that the object is included in more than one logical partition, that the object is read-only, and that the amount of fragmentation does not exceed the fragmentation threshold.

As per **claim 19**:

A system, comprising:

storage;

a storage controller coupled to the storage, wherein the storage controller is enabled to:

receive an I/O request to write an update to an object in the storage;

determining whether an amount of fragmentation of the object in the storage exceeds a fragmentation threshold indicating an acceptable number of bytes stored in non-contiguous locations in response to receiving the I/O request;

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview

with David Victor (39,867) on 2/24/2010.

The application has been amended as follows:

As per **claim 1**:

A method, comprising:

receiving an I/O request to write an update to an object in storage;

determining whether an amount of fragmentation of the object in the storage

exceeds a fragmentation threshold indicating an acceptable number of bytes stored in

non-contiguous locations in response to receiving the I/O request;

determining at least one logical partition including the object;

determining whether the object is read-only;

if the object is not read-only and if the object is within one logical partition,

defragmenting the object in storage so that blocks in storage including the object are

contiguous in response to receiving the I/O request to write the update to the object,

wherein the request to write the update to the object causes the defragmentation

operation; and

executing the I/O request to write the update to the object in storage without

defragmenting the object in response to determining at least one of that the object is

included in more than one logical partition, that the object is read-only, and that the

amount of fragmentation does not exceed the fragmentation threshold.

> determining at least one logical partition including the object;
>
> determining whether the object is read-only;
>
> if the object is not read-only and if the object is within one logical partition,

defragment the object in storage so that blocks in storage including the object are contiguous in response to receiving the I/O request to write the update to the object, wherein the request to write the update to the object causes the defragmentation operation; and

> execute the I/O request to write the update the object in storage without

defragmenting the object in response to determining at least one of that the object is included in more than one logical partition, that the object is read-only, and that the amount of fragmentation does not exceed the fragmentation threshold.

As per **claim 23**:

An article of manufacture comprising at least one of a computer readable storage medium having code executed by a processor and a hardware device having logic to communicate with a storage and perform operations, the operations comprising:

> receive an I/O request to write an update to an object in storage;
>
> determining whether an amount of fragmentation of the object in the storage

exceeds a fragmentation threshold indicating an acceptable number of bytes stored in non-contiguous locations in response to receiving the I/O request;

> determining at least one logical partition including the object;
>
> determining whether the object is read-only;
>
> if the object is not read-only and if the object is within one logical partition,

defragment the object in storage so that blocks in storage including the object are contiguous in response to receiving the I/O request to write the update to the object, wherein the request to write the update to the object causes the defragmentation operation; and

> execute the I/O request to write the update to the object in storage without

defragmenting the object in response to determining at least one of that the object is